

### **AMENDMENTS TO THE CLAIMS**

**This listing of claims replaces all prior versions of claims in the application.**

1. Cancelled.
2. Cancelled.
- 3 (Currently amended): A method for producing ~~the~~ a modified electroconductive polymer material as defined in claim 1 comprising  
an electroconductive polymer; and  
a metal oxide filled in a space between chains of said electroconductive polymer,  
said metal being oxidized through a galvanic corrosion reaction between three  
substances consisting of a metal, a cation radical/dication in the electroconductive  
polymer, and absorbed water,  
said method comprising the steps of:  
  
allowing an electroconductive polymer and a metal having a work function less than that of  
said electroconductive polymer to be brought into contact with one another;  
  
keeping the contact between said metal and said electroconductive polymer, under the  
presence of absorbed water, so as to create the state of coexistence and *forming a galvanic*  
battery between three substances consisting of said metal, a cation radical/dication in the  
electroconductive polymer and said absorbed water; and  
  
entering a formed metal oxide/hydroxide into the electroconductive polymer, and  
diffusingly moving therein to reside in nano-space between chains of said electroconductive

polymer.

4 (Previously presented): The method as defined in claim 3, wherein said step of allowing said electroconductive polymer said metal to be brought into contact with one another includes:

forming on a substrate a film made of an electroconductive polymer;

vapor-depositing on a surface of said film a metal having a work function less than that of said electroconductive polymer; and

penetrating the absorbed water into the electroconductive polymer through the microvoid, micro-scratch or pinhole.

Claim 5. Cancelled.

Claim 6. Cancelled.

Claim 7. Cancelled.

Claim 8. Cancelled.

Claim 9. Cancelled.

Claim 10 (Previously presented): The method as defined in claim 3, further comprising a reducing reaction induced by adding a negative ion.

Claim 11 (Previously presented): The method as defined in claim 10, wherein said negative ion is at least one selected from the group consisting of  $\text{ClO}_4^-$ ,  $\text{BF}_4^-$ ,  $\text{PF}_6^-$  and para-toluene sulfonate ion.

Claim 12 (Previously presented): The method as defined in claim 3, wherein said metal is contacted with said electroconductive polymer in an inhomogeneous pattern.

Claim 13 (Previously presented): The method as defined in claim 3, wherein said metal contacted with said electroconductive polymer has a structural defect.

Claim 14 (Previously presented): The method as defined in claim 13, wherein said structural defect is at least one selected from the group consisting of a micro-void, micro-scratch and a pinhole.

Claim 15 (Previously presented): The method as defined in claim 3, wherein said metal is brought into contact with said electroconductive polymer by a deposition process selected from the group consisting of vapor deposition, a sputtering process, a plating process, an electrodeposition process and an electron beam process.